

# **Mrs. Ross' Science Notebook**

Science Questions, Research & Experiments

# Your Assignment: Begin Your Keynote™ Science Notebook

**This is your assignment, so how will it happen?**

- You may use data from any of the following sources to help yourself answer the question: What does it Take to Be A Scientist?
- Use the links below, as well as the two slides that follow to help yourself... make digital notes using Keynote™ on your iPad®, and don't worry about perfection... worry about UNDERSTANDING and coming up with a good meaning for the idea of SCIENTIST.

- Links:
  - [Careers in Engineering](#)
  - [John Rinn "Is Being A Scientist Fun?"](#)
  - <http://kidscientist.com/>
  - [USDA - Want to Be A Scientist?](#)

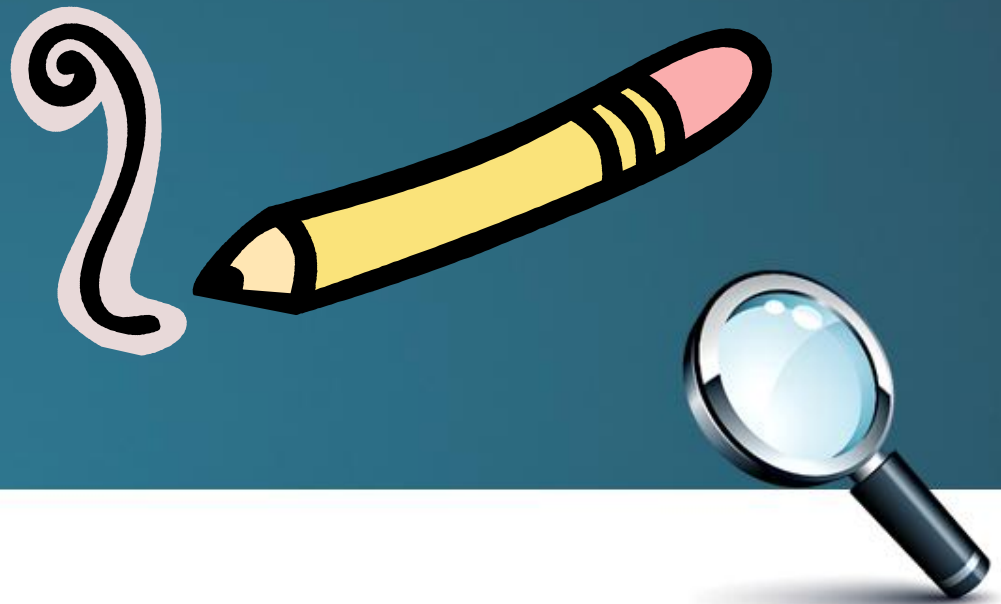


# SKETCH THE PENCIL ACTIVITY

*To create a notebook entry,  
include drawings!*

Outside shape

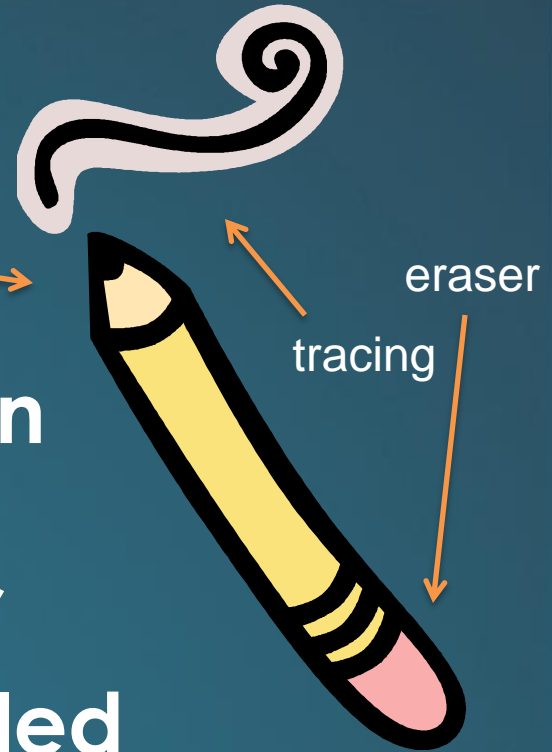
Split object into parts



# Move from Sketch to Scientific Illustration

- **Label the parts**
- **Add color and dimension**
- **Drawing now is detailed,**
- **accurate, and labeled**

Lead point



# OBSERVATIONS ORGANIZER

## *Writing Frame*

<i>Think of properties you can see such as size, shape, color, lines, texture, pattern, behavior...</i>	I observed
<i>Think of the other senses of smell, sound, touch, and perhaps taste!</i>	I noticed
<i>Connect it with something that you already know.</i>	It reminds me of
<i>Add more detail as needed.</i>	This is so because
<i>Be curious and ask questions you could investigate.</i>	I am curious about  It surprised me that  I wonder what would happen if

After the drawing and labels, you'll want to include an diary entry of observations. This outline is a great example of scientific thinking!

(And you'll see it often in our class!)

This organizer or writing frame is one part of a comprehensive, research-based approach to teaching students how to think, talk and write like scientists. (See *Writing in Science* by Betsy Rupp Fulwiler, © 2007, Portsmouth, NH: Heinemann.)



# INCLUDE RELEVANT FACTS AND DETAILS...

## The Anatomy Of A Pencil

**Body:** Most often made of wood, however it can be made of other materials including cotton scraps from blue jeans. Wooden bodied pencils are often made from incense cedar slats. A second grooved slat is glued on top of the graphite core filled slat; the slats are then cut and shaped into individual pencils. **According to the Dixon Ticonderoga Company, the reason why pencils are often painted yellow is because, during the 1800's, the best graphite came from China, and because yellow was the color of the Imperial Chinese Emperor and stood for royalty and respect; by painting the pencil yellow, people would recognize that their pencil contained the finest graphite available.**

**Eraser:** The eraser is also known as the rubber, (it used to be made from rubber), it is actually a plastic or sometimes vinyl compound.

**Ferrule:** The ferrule is the metal band that's located at the end of the pencil body and holds a eraser which has been glued into it.

**Graphite:** Also known as the writing core. The writing cores are glued into grooves that have been cut into the wooden slats. **The writing core is made from graphite and clay. The more graphite in a pencil - the darker the mark. The more clay in a pencil - the lighter the mark.**



# THE BOX & T-CHART

Show a skill,  
here:  
Compare and  
Contrast!

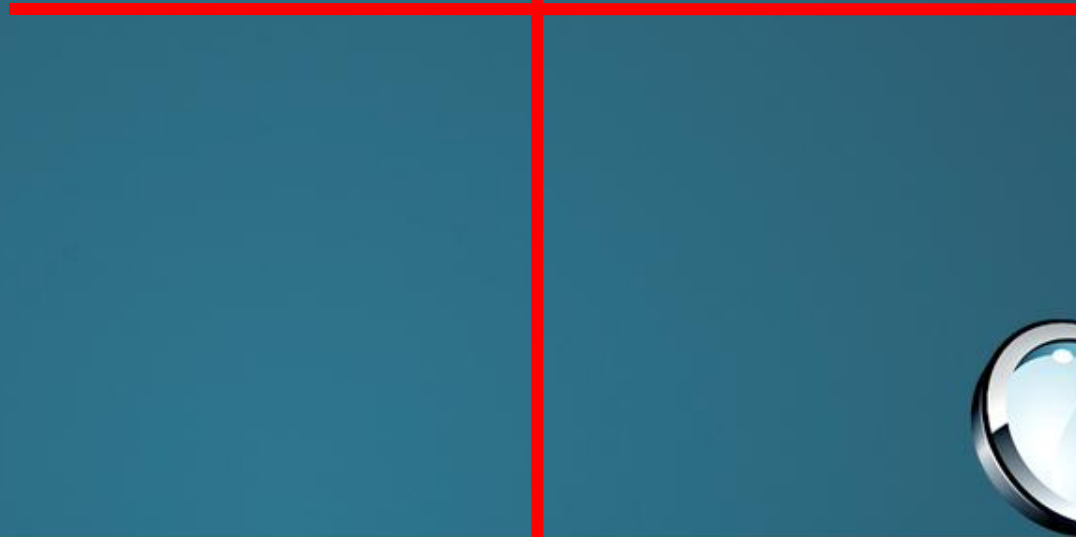
**Similarities**



**PENCIL**

**MARKER**

**Differences**



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**Use a writing  
frame to help  
yourself make  
the needed  
sentences!**

## COMPARE AND CONTRAST Writing Frame

Start with how things are the same or similar.	The _____ and the _____ are the same because they both _____.
Add more details as needed.	In addition, they both _____.
Explain how they are different. You can compare the same property or characteristic in the same sentence. Use "and", "but", or "whereas" to set up the contrast.	They are different because the _____, but the _____ does not.
Add more detail as needed.	Also, the _____, whereas the _____ does not.

**Your products  
will always be  
graded  
according to  
what you  
include &  
leave out!**



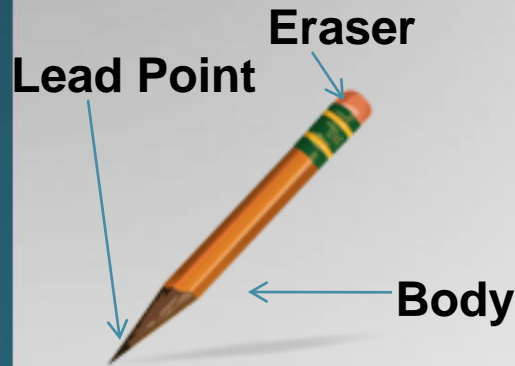
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# A Rough Example

Here I inserted a clip art image, then added text box labels.

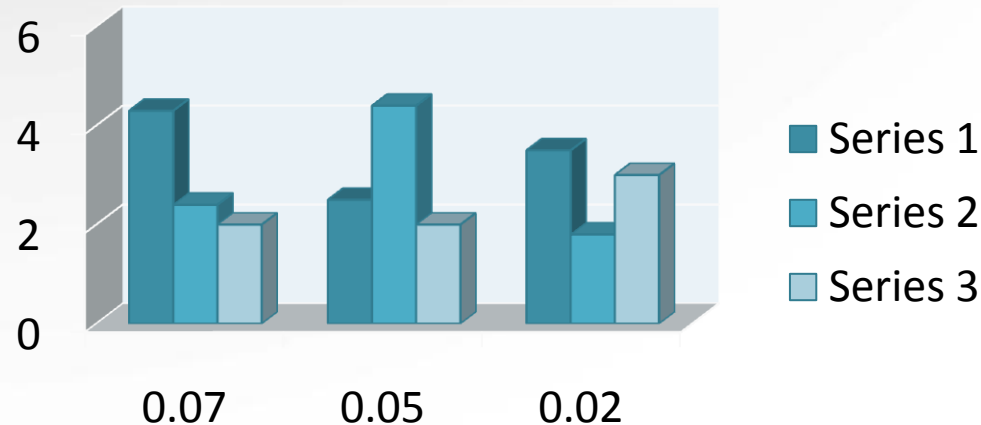
Also, I have included a sample of details, a hypothetical question, and invented data to show analysis. Normally, you would have many more pages of pictures, data, and factual information!



## Pencil

-Pencils are used as a primary writing tool in schools throughout the world. Their casing may be made out of wood, as well as plastic, and have an inner core of lead, overwhelmingly 0.07 mm.

-Question: Which diameter of lead results in less writing strain (cramping and fatigue, due to breakage, etc) over 1 school day by a majority (51%) of students sampled?



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# What is a Scientist?

That's an excellent question, because the root word "science" has multiple meanings.

So, a SCIENTIST is a person *who is or does what (?) as* related to science-

- Do they study one or more sciences?
- Do they ask questions?
- Do they all conduct research? What kind? How?
- Are they always or even usually correct in their thoughts?
- What do they do when they are wrong? Lose their jobs?



# Scientific Observations

Week 1 - Observation 1 – What Scientists Do? Pick 1!

- » Study – Making observations about an action of a person or thing over time
- » Question – Ask about the cause or effect of an action over time
- » Theorize – Create an explanation for cause or effect X over time
- » Experiment – Test their theory by gathering data in controlled environment
- » Report – Explain, through interpreting data, why their theory (hypothesis) was correct or incorrect, and possible ways to make the experiment successful



# The End Result?

- To answer the question “Mrs. Ross, so what should I have when I’m done to hand in?, here’s a list:
  - You need an original Keynote presentation, very much like a Powerpoint presentation...
  - It should be multiple pages, to fully show how your ideas developed during the week
  - It should clearly show notes on what we read as a class, what you’ve read individually, and cite (give credit to) your sources
  - It should be an unfinished document, because you’ll be using it ALL YEAR, so that should take away any idea of PERFECTION... Just show your ideas growing!
  - It should be about only 1 subject so far: What does it take to be a Scientist?
- That’s it! :^)

*Mrs. Ross*

